



State of Ohio Environmental Protection Agency

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Ted Strickland, Governor
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May 6, 2008

**RE: NEASE CHEMICAL SUPERFUND SITE
COLUMBIANA COUNTY
FEASIBILITY STUDY
OHIO EPA COMMENTS**

Ms. Mary Logan
Remedial Project Manager
U.S. EPA Region V
77 W. Jackson Blvd.
Chicago, IL 60604-3590

Dear Ms. Logan:

Enclosed are Ohio EPA's comments on the March 2008 Feasibility Study (FS) for Operable Unit (OU) 3 of the Nease Chemical Superfund Site in Salem, Ohio. The report was submitted by Golder Associates, Inc., on behalf of Rutgers Organics Corporation (ROC). The comments include those provided by the Division of Surface Water (DSW) technical personnel (Dr. John Estenik, Mylynda Shaskus, and Dave Altfater) and our Central Office remediation specialist, Dr. Timothy Christman, in addition to me.

As requested, the comments have been separated into two categories: (A) major comments that should be considered before the FS is approved and (B) other comments, including requested clarifications.

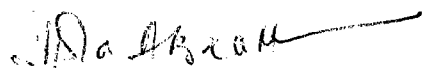
Overall, the FS report is clear and the information is well-presented, to support the remedial alternatives. The report also addresses Ohio EPA's previous comments on the November 2007 Interim Deliverables Report.

Please note that the April 10, 2008 memo from Dr. James Chapman, U.S. EPA, on the draft preliminary remediation goals (PRGs) for mirex in cattle in floodplain areas of Middle Fork Little Beaver Creek (MFLBC) has not yet been reviewed; comments, if any, will be provided at a later date. However, given Ohio EPA's minimal comments on the previous draft of this memo, it is not anticipated that there will be substantive technical comments impacting FS approval.

NEASE CHEMICAL SUPERFUND SITE
MAY 6, 2008
PAGE 2

Please let me know if you have any questions on the comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Sheila Abraham", with a long horizontal flourish extending to the right.

Sheila Abraham, Ph.D.
Site Coordinator/Risk Management ES-III
Division of Emergency and Remedial Response

SA/kss

enclosure

ec: Dave Altfater, Ohio EPA, DSW-EAU
Rod Beals, Ohio EPA, DERR, NEDO
Timothy Christman, Ohio EPA, DERR, CO
John Estenik, Ohio EPA, DSW, CO
Steve Love, Ohio EPA, DERR, NEDO
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NEASE OPERABLE UNIT 3 (MARCH 2008) FEASIBILITY STUDY OHIO EPA COMMENTS

May 6, 2008

Ohio EPA has reviewed the Feasibility Study (FS) for Operable Unit (OU) 3 of the Nease Site, consisting of Middle Fork Little Beaver Creek (MFLBC) and Feeder Creek. The document was submitted by Golder Associates Inc., on behalf of Rutgers Organics Corporation (ROC). Below, are consolidated comments from the Division of Emergency & Remedial Response (DERR—Sheila Abraham and Timothy Christman) and Ohio EPA's Division of Surface Water (DSW—John Estenik, Mylynda Shaskus, and Dave Altfater).

As requested, the comments have been separated into two categories: (A) major comments that should be considered before the FS is approved and (B) other comments, including requested clarifications.

Please note that the April 10, 2008 memo from Dr. James Chapman, U.S. EPA, on the draft preliminary remediation goals (PRGs) for mirex in cattle in floodplain areas of MFLBC, has not yet been reviewed; comments, if any, will be provided at a later date. However, given Ohio EPA's minimal comments on the previous draft of this memo, it is not anticipated that there will be substantive technical comments impacting FS approval.

Overall, the FS report is clear and the information is well-presented, to support the remedial alternatives. The report also addresses Ohio EPA's previous comments on the November 2007 Interim Deliverables Report.

A. ISSUES PERTINENT TO FS APPROVAL

"Do-not-exceed" single-sample PRG: In view of the strongly sorbing nature of mirex, Ohio EPA's Agency agrees with the approach of targeting remediation and confirmatory sampling to soft sediment areas. However, given the persistent nature of mirex, the Agency has concerns regarding the plan to base removal on surface-weighted average concentrations (SWAC) across one-river mile and one-acre terrestrial plots without any consideration of potential "hot spots" or elevated concentrations. Please give some consideration to setting a maximum single sample "do-not-exceed" remedial goal for sediment and floodplain soil [especially as the FS indicates that such potential "hot spots" will be investigated during the Pre-design Investigation (PDI)].

Pre-judgement of possible PRG (range) and targeted areas: While some prejudgment of river mile (RM), reach, or targeted area to be remediated (between RM 37 and RM 31) is necessary in the FS, Ohio EPA recommends flexibility to evaluate data collected in the PDI, and/or factor in the potential impacts of Feeder Creek remediation, prior to making final remedial decisions on the stream area to be remediated. Further, given the planned remediation in Feeder Creek and surface water management issues, coupled with the levels of mirex in surface soil, there may be some benefit to deferring final remedial decisions on areas upstream of RM 37 to the PDI.

OU 3 Remediation Documentation: In addition to the protection of ecological receptors, a goal of the planned remediation should be to clean up mirex-contaminated sediment and floodplain soil, such that the surface water resource can, at the end of the post-construction

recovery period, achieve “fishable”¹ standards. One measure to document that this has been achieved is the attainment of the mirex nondrink water quality criterion² (of 0.00011 µg/L) in Feeder Creek and MFLBC. Please refer to the comment above on the potential for mirex run-off to impact surface water in Feeder Creek and MFLBC, and specific comments in Section B on attaining these standards. Ohio EPA recommends that such measures be evaluated in MFLBC and Feeder Creek to document the system recovery.

Floodplain Soil Remediation Potential Issue: Floodplain soil(s) will be cleaned up to risk-based levels that will be protective of wildlife and cattle. However, it is possible that mirex will still be detected in milk and beef in herds grazing in the MFLBC area, post-remediation. At this time, it is unknown whether any detection(s) of mirex will be acceptable if milk or beef is tested by the Ohio Department of Agriculture or other state agency. Please consider this potential issue as the site moves through the remedial process.

B. SPECIFIC CLARIFICATIONS REQUESTED

SECTION 2

1. General Comment: To help clarify what data were included or excluded in this report, please include a table listing the sample events, matrix, data source, and whether or not the data have been relied on for decision-making purposes in this FS. An example table is provided below.

(Table Example Format) Data Used/Reviewed

Year	Source (Agency/ Lab)	Matrix	Comments
1980	U.S. EPA/ XYZ Lab	Fish Sediment Surface Water	Did not meet QA/QC requirements
1991	ROC/ PQR Lab	Fish Tissue Whole Fish Surface Water Floodplain Soil Sediment	Data used for FS
1999	ROC/ XYZ Labs	Fish Tissue Sediment	Data not used
2005	Ohio EPA/ DES	Fish Tissue Sediment	Data used for FS
2005	ROC/ Ohio EPA DES Lab	Floodplain Soil	Data used for FS

2. Section 2.1, Page 3, 3rd paragraph: The use designation descriptions for the MFLBC are not completely accurate.

¹ Analysis of data based on U.S. EPA risk assessment guidances (see Appendix G in the FS), indicates that there is no contact risk above acceptable standards in MFLBC; the waters are thus “swimmable”. Feeder Creek physically does not support swimmable waters.

² Drinking water criteria apply to all water bodies within 500 yards of drinking water intakes. Since this is not the case in Feeder Creek and MFLBC, the nondrink water quality criteria apply.

- In Ohio EPA's current regulations, MFLBC is classified as Exceptional Warmwater Habitat from the spillway at Lisbon (RM 12.5) to the mouth, and all other segments (RM 12.5 to the headwaters) are classified as Warmwater Habitat. There are no sections of MFLBC classified as Limited Warmwater Habitat—that is an old designation that is no longer applicable.
- The last sentence states that the MFLBC waters are not designated for human consumptive use. DSW prefers to use the terms "drink" and "non-drink" when discussing surface water, particularly as MFLBC is a "primary contact recreation" stream with edible-sized fish that can be consumed.

Please verify the Beaver Creek watershed use classification(s) from Ohio EPA's DSW website at: <http://www.epa.state.oh.us/dsw/rules/01-15.pdf> and revise the last three (3) sentences as necessary.

3. Section 2.2.1, Page 4, Beef & Milk Sampling, 1987-1998: Is the statement that the 3rd dairy farm (at RM 22.5) had existing fencing in the 1987 to 1998 period that excluded cattle from the creek such that milk samples did not exceed the action level accurate? Based on sampling data provided by the Ohio Department of Agriculture, all three (3) farms in the area had mirex at "trace" levels in milk. If cattle did not access the floodplain, where did the mirex detected in milk come from? Also, there is fencing currently in the area—did ROC not install it?
4. Section 2.2.1, Page 5: Ohio EPA believes that in 1999, in addition to the study where DSW-EAU personnel assisted ROC in the field, there was a separate study by Ohio EPA's fish consumption advisory program. Please check the data source(s) and add a sentence to the text as necessary.
5. Section 2.2.1, Page 7: Sport Fish Advisory Program: This section is accurate, except for the omission of the one meal per month advisory due jointly to mirex and PCBs for carp between Allen Road and State Route 14. The section mentions the PCB advisory for carp, but does not mention that the carp are also under advisory for mirex for that stretch of stream. Please revise.
6. Section 2.3.1, Figures 4-6: Logically, the sediment volumes in Figures 5 and 6 should add up to the volumes in Figure 4. Is there a 3rd category of sediment (mixed, for example, is included in the tables) that is excluded from the figures? If so, it would be helpful to clarify that and also what the estimated volumes might be.
7. Section 2.3.1, Page 9 and Figure 7: Ohio EPA recommends that in the interests of transparency, the river mile segments presented in Figure 7 be expanded to include the former Nease facility and areas just upstream of that (i.e., include RM 38.3 to RM 37 also in this figure).
8. Section 2.3.1, Page 10 and Figure 10: Was the most recent peak discharge greater than 20,000 cfs in 2005 (cited in the text) or 2004 (shown in the figure)? Please revise as necessary.
9. Section 2.3.2, Figures 11-14: The data presented in Figures 11 to 14 represent the biocriteria information provided to ROC by Ohio EPA (table in Appendix E). However, due to periodic updates in the ECOS program that supports the biocriteria database,

there are some discrepancies between what is currently in Ohio EPA's ECOS database and the table in Appendix E.

Since these are fairly minor and do not change the conclusions of the FS, Ohio EPA recommends adding a bullet to the "General Notes" in front of the figures explaining that the biocriteria figures are based on information provided by Ohio EPA, but there may be minor changes to the biocriteria indices when the Agency's ECOS program supporting the database is periodically updated.

10. Section 2.3.2, Page 10 and Figure 11 and 14: There are a few differences between the IBI values and QHEI in the table in Appendix E and Figures 11 and 14 respectively, mainly for the 1985 data. For example:

- The IBI at RM 28.8 in 1985 was 28 in the table (29 in ECOS, currently—see previous comment), but appears closer to 25 in Figure 11.
- The QHEI at RM 32.7 in 1985 looks closer to 52 in Figure 14, whereas it is actually 59 (58.5 in ECOS now).
- The QHEI at RM 28.8 in 1985 looks closer to 43 in Figure 14, whereas it is 37 in the table.
- The QHEI at RM 25.1 in 1985 is 50, whereas it looks less than that in Figure 14.

Are the differences due to the graphing software? Please check and see if a closer correspondence between the figures and the table is possible.

11. Section 2.3.2, Page 10 and Figure 12: The ICI value for RM 37.7 in 1985, 0 (zero) is missing from the figure. According to Ohio EPA's DSW-EAU, this was a true "0" (zero) value (i.e., not a missing sample). Please consider how this can be depicted in the figure.

12. Section 2.3.2, Page 11, 1st paragraph (statement that 'habitat was influenced by channelization and that full attainment of the goals would not be reached at certain locations due to habitat conditions'.) Habitat was influenced by past channel modifications, however, the QHEI scores are high enough that attaining the non-significant WWH biocriteria are possible. Please revise the statement to reflect this.

13. Section 2.3.3.1, Page 13, Fish Tissue: The information that U.S. EPA 1987 fish data were not considered in the FS is included in the "general notes" to the figures. However, in the interests of transparency, please add a footnote to the main text that U.S. EPA 1987 data were excluded, with the reason.

14. Section 2.3.3.1, Page 13; Figure 27:

- The purpose of the statement "no significant downstream movement of mirex" in the context on Page 13 is unclear. If the point is that mirex is not moving as a "slug" downstream, Ohio EPA agrees with that assessment. However, it has been established with sediment and fish tissue data that mirex has migrated downstream in fish well into the mainstem of Little Beaver Creek. The Agency

recommends removing the statement starting with the word “suggesting” to eliminate any potential ambiguity regarding the claim.

- The FDA action level for mirex (on Page13) is listed as 0.1 µg/kg, when it should be 0.1 mg/kg.
15. Section 2.3.3.1, Page 14 Fish tissue: When discussing the fish consumption advisory in the 1st paragraph, please mention the unrestricted fish consumption advisory for mirex (≤ 200 µg/kg). Note that all fish analyzed up to RM 26 had mirex concentrations that were greater than the unrestricted advisory level. Below RM 26 a few species had mirex concentrations higher than the unrestricted consumption level (common carp at RM 20.9 and RM12.5; and silver redhorse at RM 1.9).
 16. Section 2.3.3.1, Page 15, Fish Tissue: Even though sediment concentrations (analyzed by ROC/ Exygen) were lower in Egypt Swamp, one common carp fish tissue sample collected in Egypt Swamp did have a mirex level of 790 µg/kg. Please add this, with some discussion of the potential for longer-lived specimens to accumulate mirex.
 17. Section 2.3.3.1, Page 15, Floodplain Soil: It is difficult to distinguish between the minimum and 2005 data. Please consider providing another figure with 2005 data.
 18. Section 2.3.2.2, Page 16: Feeder Creek may need to be better defined during the PDI for remediation purposes. Is the wetland area close to the current MacTrailer facility considered part of Feeder Creek, or will it be addressed as part of OU2? See comments below, on shallow ground water historically daylighting in this wetland area, and the run off from the railroad tracks culverts impacting this area.

SECTION 3

19. Section 3.1.1, Page 21, Future Resident, Table 2: In the Endangerment Assessment (EA), the risks presented for future off-facility resident included the fish ingestion pathway. Is there a reason why this pathway was omitted for the off-facility resident in Table 2?
20. Section 3.1.1, Pages 21 and 22: The term “marginally” exceeded risk goals used in the discussion of risk is subjective, as U.S. EPA has not defined what “marginal” exceedances are in risk assessment guidance. At the Nease site, OU 3, risks above U.S. EPA’s acceptable risk goals range from an HI of 1.61 for the beef pathway to 5.44 for the fish ingestion pathway. Please delete the word “marginal.”
21. Section 3.1.1, Pages 20 to 22, Summary of Health Risks and Table 2: For the record, Ohio EPA does not normally make remedial decisions based on central tendency exposure (CTE) estimates, since U.S. EPA guidances (RAGS Volume 3, Part A) recommend that risk management decisions should be based on the reasonably maximum exposed (RME) receptor. For this reason, the discussion of CTE results has not been reviewed in detail.
22. Section 3.1.2, Page 22, Feeder Creek: Although Feeder Creek does not provide suitable habitat for fish, it feeds into MFLBC, which does provide suitable habitat for fish and upper trophic level receptors. Also, since screening benchmarks are exceeded in

Feeder Creek (see the EA, pages X-12, X-20), there is a potential for adverse ecological effects on lower trophic level biota. Please add this to the discussion.

23. Section 3.1.2, Page 23, MFLBC: Please modify the discussion of mirex in the last sentence of the 1st (partial) paragraph. Based on the ICI, it appears that mirex may have little impact on invertebrate communities. However, the IBI standards are not attained in several areas close to the Nease site, which could be attributable to a variety of sources. Data on the MI_{wb} is lacking upstream of Egypt Swamp and in the vicinity of the Nease site, and so no conclusions can be made based on this index.
24. Section 3.1.2, Page 23, MFLBC, 3rd bullet: Based on the EA conclusions, the HQ values for the shrew based on the dietary NOAEL are 2.11 in Reach 1, but 3.46 across all MFLBC reaches. Please add this.
25. Section 3.1.2, Page 23, MFLBC, 4th bullet: Again, based on the EA conclusions, the HQ values for the red fox across all MFLBC reaches are 9.59. Please include this in the discussion.
26. Section 3.1.3, Page 24, 3rd bullet and footnote: Please delete the term “hypothetical” when discussing (future) residents. Residents live along MFLBC and the Agency has every expectation that the Site will be cleaned up, such that livestock grazing in the floodplain will be possible and the fish advisory related to mirex can be lifted.
27. Section 3.1.3, Page 24: Exposure to Feeder Creek surface water is not above acceptable risk levels; however, surface water samples in Feeder Creek have exceeded mirex ambient water quality criteria (see comment below). Please add this.
28. Section 3.2, Page 26, State Chemical Specific ARARs: Please amplify the 2nd bullet—the mirex WQC that is applicable to Feeder Creek and MFLBC is the Ohio River Basin Human Health Nondrink criterion of 0.00011 µg/L. See:

<http://www.epa.state.oh.us/dsw/wqs/Ohioval11.pdf>

Ohio EPA can provide the technical and programmatic justification for this as necessary.

29. Section 3.3, Page 26, Surface Water Preliminary Remediation Goals: Ohio EPA agrees that mirex was not detected in MFLBC surface water; however, mirex was detected in Feeder Creek surface water at levels ranging from 0.0304 µg/L to 0.362 µg/L. See also previous comments for the potential for run off with (high) levels of mirex to impact Feeder Creek and MFLBC. Thus, after an appropriate post-construction period, it should be documented that the mirex water quality nondrink criterion of 0.00011 µg/L has been achieved in Feeder Creek and MFLBC.

Also, as an option for MFLBC, Ohio EPA regulations allow the use of fish tissue data as a surrogate for water column data in determining compliance with water quality criteria. The technical details of the protocol, including inputs for the calculations for a mirex-specific fish tissue level, can be provided as necessary. This option may not be available for Feeder Creek, given the possible lack of edible-sized fish.

30. Section 3.3.1, Page 27, 1st paragraph: What is the basis of the lower value in the PRG range cited (477 µg/kg)? The upper value (753 µg/kg) is the LOAEL-based upper limit in Dr. Chapman's memo in Appendix H.
31. Section 3.3.1, Page 27, 2nd paragraph:
- Ohio EPA recommends that subjective qualifiers, such as the risk "only slightly," exceeded U.S. EPA's acceptable criteria are eliminated. Note that upstream of Lisbon Dam, the calculated HI was 5.44 and the carcinogenic risk was 1.32E-04.
 - As mentioned, the EA concludes that fish consumption based on an exposure concentration of 1.27 mg/kg resulted in risk above acceptable levels (Table 2). If the same approach based on the approved EA (risk assessment) is used to calculate an acceptable PRG based on fish consumption, the fish fillet PRG based on the HI is 234 µg/kg; the fish fillet PRG based on carcinogenic risk ranges from 9.62 to 962 µg/kg. Note that the acceptable fish consumption PRG based on the HI correlates very well with the unrestricted fish consumption advisory³, and that several samples with mirex tissue concentrations greater than 200 µg/kg have been detected in MFLBC from RM 36.7 to RM 1.9 (Table 1). Please revise any discussion of the fish tissue levels to reflect these nuances.
 - The FS assumes that reducing the sediment mirex concentrations to an ecologically-based PRG will reduce human health risks associated with consumption of contaminated fish tissue to acceptable levels.
32. Section 3.3.2, Pages 28-29, Ecological Exposures (PRG): Ohio EPA defers to Dr. Jim Chapman's review of the calculated PRG ranges, but recommends that some consideration be given to the smaller home range⁴ of the short-tailed shrew when choosing the exposure unit size.
33. Section 3.3.2, Page 29, Human Exposures—Beef and Milk Ingestion: The mirex action level of 0.1 ppm cited is a historic (FDA) level. Ohio EPA is following up with the Ohio Department of Agriculture to check if they have an action level for mirex for in milk and beef.
34. Section 3.3.2, Page 29, Human Exposures—Beef and Milk Ingestion: Contradictory: page 4 refers to existing fencing that prevented the cattle from reaching the creek (and presumably contaminated media). So was soil sampling at RM 22.5 from areas *inaccessible* to cows? Please see previous comments on fencing precluding cattle from mirex contaminated areas.
35. Section 3.3.2, Page 30, Human Exposures—Beef and Milk Ingestion PRG: Additional comments on ROC's suggested 1 ppm floodplain soil mirex PRGs may be provided, based on Ohio EPA's review of Dr. James Chapman's memo.

³ Both the HI and the (unrestricted) fish consumption advisory level are based on a non-carcinogenic end point.

⁴ When food is abundant, the shrew's home range is between 0.03 to 0.07 hectares (0.07 to 0.17 acres); however, when food is scarce, the home range can vary between 1 to 2.2 hectares (2.47 to 5.44 acres).

36. Section 3.4, Pages 30-31, Preliminary Remedial Action Objectives (General Comments):

- Additional RAOs (surface water; fish-tissue based): Please refer to comments above on surface water, and add another RAO on meeting the non-drink surface water criterion of 0.00011 µg/L mirex in the water column.
- Exposure unit: Ohio EPA's DSW-EAU has typically used 0.4 river miles as the home range of most fish species. However, given that the basis of the ecological PRG is one river mile, Ohio EPA concurs with the use of an exposure unit of river mile at this site.

37. Section 3.4, RAO 2, Page 30: The Agency agrees that based on the sampling to date, mirex concentrations are higher in the floodplain in certain areas; however, the PDI data should be evaluated, to determine whether this RAO (mirex contamination of floodplain from MFLBC sediment) needs to be achieved.

SECTION 4

38. Section 4.2.1.3, Pages 39-40: Ohio EPA has some reservations that monitored natural attenuation has been retained for streambed sediments (Alternative 2a), even though mirex is highly resistant to biodegradation (Section 6.3.5). Thus, the only way that the mirex is likely to attenuate is to wash downstream, a dilution remedy. Ohio EPA agrees that monitored natural attenuation may be an appropriate risk management decision in some areas, with excellent ecological habitat coupled with relatively lower mirex concentrations and bioavailability.

39. Section 4.2.1.3, Page 40, Costs: It may be helpful to add a reference to the cost tables to clarify the cost differential(s) between the necessary long-term monitoring to evaluate the remedy efficacy and that for MNR.

40. Section 4.2.2.2, Page 42; Section 5.3, Page 49: If soils are consolidated within the Nease Site in OU-2, appropriate safeguards need to be in place, to ensure that mirex does not leach to ground water. As noted in Ohio EPA's August 2007 comments on the Baseline Tech Memo, mirex has been detected in several wells at concentrations ranging from 0.016 µg /L to 0.816 µg/L, in areas of both low and high VOC concentrations. Until the reason(s) for these mirex detections has (have) been satisfactorily explained, precautions should be taken during any consolidation process to avoid further leaching to ground water.

SECTION 5

41. Section 5.3, Page 47: (NFA from headwaters or RM 37.6 to RM 37): Please refer to comments in the first part on pre-judgment of the remedy. The most recent sampling does not show high levels of mirex in sediment above the risk ranges cited (477 to 753 ppb) upstream of RM 37. However, Ohio EPA would appreciate having some flexibility to evaluate data collected in the PDI, and/or factor in the potential impacts of Feeder Creek remediation prior to making final remedial decisions on the stream area to be remediated.

42. Section 5.3, Page 48, Surface Water Management: When developing the site-wide surface water management system, please pay special attention to seep areas. For example, in the current wetland area adjacent to the current MacTrailer facility, shallow ground water has daylighted historically; overland flow from the railroad tracks culvert area(s) also enters this wetland area.
43. Section 5.3, Page 48-49, Long-term fish tissue and sediment monitoring: Ohio EPA believes that there is a need for monitoring downstream of remediated areas to assess the overall efficacy of the remedy. This should be considered as the site moves through the next stages in remedial process.
44. Section 5.3, Page 50, MFLBC Sediment, 3rd bullet: When would the fish tissue sampling baseline event be, and what is the anticipated level of effort? While we recommend a collaborative effort between Agencies & ROC, such that data collected can be used to support different programmatic decisions, Ohio EPA cannot commit to this effort without some understanding of the resources that may need to be devoted.
45. Section 5.4.1, Page 51: The stream recovery was in some part not due to “natural improvement,” but to the reduced pollutant loadings to the MFLBC from the Salem WWTP over the past two decades. The approved MFLBC TMDL Report may be a resource when discussing the health of the stream. See:

<http://www.epa.state.oh.us/dsw/tmdl/LittleBeaverCreekTMDL.html>

46. Section 5.4.4, Page 53, 2nd full paragraph: Given that mirex concentrations have not decreased in the stream sediment and fish have remained relatively constant from 1987 to 2005 (page), it is unlikely that Alternative 2a and Alternative 2b will address RAO-1 and RAO-2 in any acceptable time frame.
47. Section 5.6.1, Page 55, 1st (partial) paragraph: “clean backfill” – what does this mean? Is this the “isolation” or “armored” or “habitat” layer (page 32)? What will the physical characteristics of this layer be?

SECTION 6 (DETAILED ANALYSIS OF OU-3 ALTERNATIVES)

48. Section 6.3, Page 64: Please see the previous comment on factoring the shrew home range into remedial decisions.
49. Section 6.3, Pages 64-65: See previous comments on prejudgment of reach or targeted area to be remediated (between RM 37 and RM 31).
50. Section 6.3, Page 65, last partial paragraph: Please see previous comments on surface water management, including in the wetland area created by groundwater day lighting in proximity to the Crane-Deming/ Mac-Trailer facility.
51. Section 6.3.1, Page 66: No assertions can be made regarding whether the mercury advisory will remain in place beyond the time necessary for mirex to attenuate. On the one hand, much work remains to be done on cleaning up atmospheric sources of mercury; on the other hand, mirex is relatively resistant to biodegradation—witness the continuing levels in the stream.

TABLES

52. Table 1 Footnote: Revise the footnote to state that although Ohio EPA's results were not validated by Golder, the validation documentation supporting the sample analysis was reviewed by Golder in detail. The implication in the footnote is that Ohio EPA's data are less reliable, as they were not validated by Golder.
53. Table 2: See the previous comment that the values related to central tendency estimates were not checked, nor was photomirex factored into my recalculations of the RME values.
54. Table 3: For transparency, please consider adding a footnote to this table referencing the "common RAC" elements.
55. Tables 4-10 (cost estimates): The cost estimates review is deferred to U.S. EPA.

End of Ohio EPA's Comments on the March 2008 Feasibility Study for OU 3